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Modeling tool maps NOAA's operations

Agency aims to eliminate redundancies

BY John Zyskowski
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Charting the diverse signals that relate to global climate conditions, from solar flares to fish populations in the Chesapeake Bay, is all in a day's work for employees at the National Oceanic and Atmospheric Administration. But having a good handle on the systems they use to gather this data and, more importantly, whether those operations are efficient was challenging — until recently.

The NOAA office that oversees these climate-observation systems is putting together a computer-based model of its operations that depicts all its business procedures and underlying information technology systems. Using the model, for example, NOAA officials can easily see that four systems measure sea surface temperature, raising the question of whether fewer could do the same job.

"The biggest benefit of doing this is that when we develop budgets, we'll have a better feel for how we work together," said Mike Crison, director of requirements, planning and systems integration for NOAA's National Environmental Satellites and Information Service. "If we find duplication, maybe there's a reason for that or not. But we might also discover holes."

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Web Extra:

NOAA is certainly not the only federal agency modeling its business and IT operations. Agencies have been required to create enterprise architecture models since the Clinger-Cohen Act of 1996. Compliance has been mixed, but the Office of Management and Budget has been cracking down, and more modeling

efforts are now under way.

What makes NOAA's effort different is its goal to create models that will serve as everyday tools for decision-makers agencywide, whether their orientation is IT, science or program management. Part of that plan is to use a visually oriented modeling tool called Metis, made by Computas NA Inc.

More than a simple database of information, Metis provides NOAA users with visual representations of how business processes relate to one another and to IT systems. For example, users can see which offices own particular observing systems, how much the systems cost and what groups, such as airline pilots, use the information generated. As a planning tool, Metis enables users to explore the effects of possible changes to business procedures, IT infrastructures or both.

Metis "is not a tool for techies. It's designed to speak to a whole user community," said Bill Wright, president and chief executive officer of Computas. "Pictures are so powerful. With pictures, you can communicate across a broad social spectrum. You can ask a question, and the answer comes out as another picture, not text."

NOAA's modeling project started last August at the request of Conrad Lautenbacher, the Commerce Department's undersecretary for oceans and atmosphere and NOAA's administrator, who wanted a better accounting of operations.

The project's first phase, completed in January, involved taking an inventory of all the environmental measurement systems across NOAA's line offices, such as the National Marine Fisheries Service and the National Weather Service. The survey covered more than 100 observing systems operating on about 30,000 platforms, according to Crison.

The project team, which consists of about seven full-time employees with assistance from many others, collected the information using an online survey and stored it in an open-source software database. Then, they used Metis to extract the data and translate it into Extensible Markup Language for use in the models.

NOAA also linked the modeling software to a geographic information system, so that users can create maps showing observing systems' locations.

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This year's model

The National Oceanic and Atmospheric Administration is modeling its business and information technology operations using a modeling tool called Metis from Computas NA Inc. The tool:

* Provides NOAA users with visual representations of how business processes relate to one another and supporting IT systems.

* Allows users and both technical and nontechnical staff members to determine the effects of possible changes to business procedures and IT infrastructures.